

## A B S T R A C T

A method of determining timing clearance between a valve stem and a moving member using an electromagnetic actuator comprising electromagnets, an electromagnet for moving the moving member from a closed position towards an open position and an electromagnet for moving the moving member from an open position towards a closed position, each electromagnet being controlled on the basis of a reference electrical characteristic, the method comprising: controlling an electromagnet to obtain a displacement speed for a moving member as the moving member moves from one of a closed position or an open position towards the other one of an open position or a closed position; obtaining values of a reference electrical characteristic for intermediate positions of the moving member; and detecting an intermediate position at which the reference electrical characteristic is subject to a sudden change.